

1 WHAT IS CLAIMED IS:

2 1. A brightness adjusting apparatus for adjusting a
3 brightness balance of a pair of images outputted from a
4 stereoscopic camera having a first camera imaging a reference
5 image and a second camera imaging a comparison image, comprising:

6 an adjusting means for adjusting said brightness
7 balance by varying a gain;

8 a distance data calculating means for finding a pixel
9 block having a brightness correlation with a pixel block of said
10 reference image in said comparison image and for calculating a
11 distance data based on a city block distance between both pixel
12 blocks;

13 a distance data assigning means for assigning said
14 distance data to said pixel block of said reference image;

15 a first evaluation window establishing means for
16 establishing a first evaluation window composed of a plurality
17 of pixel blocks in said reference image;

18 a parallax calculating means for calculating a
19 parallax based on said distance data;

20 a second evaluation window establishing means for
21 establishing a second evaluation window composed of a plurality
22 of pixel blocks in said comparison image based on said parallax;

23 a first evaluation value calculating means for
24 calculating a first evaluation value representing a magnitude
25 of an entire brightness of said first evaluation window;

1 a second evaluation value calculating means for
2 calculating a second evaluation value representing a magnitude
3 of an entire brightness of said second evaluation window; and
4 a correcting means for correcting said gain so as to
5 reduce the difference between said first evaluation value and
6 said second evaluation value.

7

8 2. The apparatus according to claim 1, wherein
9 said second evaluation window is established in a
10 horizontally offset position from said first evaluation window.

11

12 3. The apparatus according to claim 1, wherein
13 said parallax is calculated based on a histogram of
14 said distance data.

15

16 4. The apparatus according to claim 1, wherein
17 said parallax is calculated based on a mean value of
18 said distance data.

19

20 5. The apparatus according to claim 1, wherein
21 said second evaluation window is established in a
22 horizontally offset position by an amount of said parallax from
23 said first evaluation window.

24

25 6. The apparatus according to claim 1, further

1 comprising;

2 a correlation coefficient calculating means for
3 calculating a correlation coefficient based on said first
4 evaluation value and said second evaluation value.

5

6 7. The apparatus according to claim 6, wherein
7 said first evaluation value and said second evaluation
8 value are verified by said correlation coefficient.

9

10 8. The apparatus according to claim 1, wherein
11 said second evaluation window is established by
12 finding a pixel block having a largest brightness correlation
13 with a pixel block of said first evaluation window in said
14 comparison image within a specified range on the basis of a
15 reference point established based on said parallax.

16

17 9. The apparatus according to claim 1, wherein
18 said parallax is calculated only based on said distance
19 data of a pixel block having a larger variation of brightness
20 than a threshold value.

21

22 10. The apparatus according to claim 1, wherein
23 said first evaluation value and said second evaluation
24 value are calculated from at least one pair of first and second
25 zones prepared in said reference image and said comparison image,

1 respectively and said pair of zones are established being
2 horizontally offset by an amount of pixels according to the
3 position of said zones.

4

5 11. The apparatus according to claim 10, wherein
6 said amount of pixels are established in consideration
7 of a tendency of a distance to an solid object projected in said
8 first zones.

00000000000000000000000000000000